

REMARKS

Claims 1-14 are pending in the application. The drawings have been objected to. The abstract and specification have been objected to. Claims 1-11 have been objected to. Claims 1-14 have been rejected under the second paragraph of 35 USC § 112. Claims 1-4 and 6-14 have been rejected under 35 USC § 102(b) over Kimura (WO 97/00134, translated in U.S. 6,228,480). Claim 5 has been rejected under 35 USC § 103(a) over Taoda (US Patent 5,981,425). The specification, drawings, abstract and claims have been amended hereby. In light of the above amendments and below remarks, reconsideration of the present application is respectfully requested.

In paragraph 1 of the Office Action, the drawing has been objected to because the single figure is labeled "Fig. 1." Applicants submit herewith a redlined proposed drawing correction and a replacement formal drawing correcting the informality as noted in the Office Action. Withdrawal of the objection to the drawing is therefore respectfully requested.

In paragraph 3 of the Office Action, the Abstract has been objected to as containing two paragraphs and a grammatical error. Applicants include herewith a new Abstract on a separate sheet correcting these informalities. Withdrawal of the objection to the Abstract is therefore respectfully requested.

In paragraph 4 of the Office Action, the specification has been objected to as making reference to "Fig. 1." Following the helpful suggestion contained in the Office Action, applicants have corrected this informality throughout the specification. Withdrawal of the objection to the disclosure is respectfully requested.

In paragraph 5 of the Office Action, claims 9-11 have been objected to as the term "photocatalyst" is improperly capitalized. Again, following the helpful suggestion in the Office Action, these claims have been amended to correct this informality.

In paragraph 7 of the Office Action, claims 1-14 have been rejected under the second paragraph of § 112. Applicants have amended claims 1, 3, 6, 9 and 12 as suggested in the Office Action. Withdrawal of the rejection of these claims is therefore respectfully requested.

In paragraph 9 of the Office Action, claims 1-4 and 6-14 have been rejected under § 102 over Kimura. Applicants respectfully traverse this rejection. Each of the claims of the present application recite photocatalyst granules or the method of preparing photocatalyst granules. Neither Kimura nor any of the other references cited in the Office Action teach the granules as described and claimed in the present application. Specifically, Kimura teaches a photocatalyst layer 3 on an adhesive layer, that is in turn formed on a carrier 1. However, Kimura fails to disclose mixing photocatalyst particles and silica particles in the shaping of granules as required by the claims of the present application.

Photocatalysts are commercially available with a particle size of several nm to several μm . Such photocatalyst particles are problematic because they tend to be scattered, requiring fixation of the particles onto a solid substance in an actual application such as Kimura. For the photocatalyst to exhibit its photocatalyzing function, the photocatalyst and the substance on which the photocatalyst works must be in the same location at the same time.

The larger the specific surface area of the photocatalyst (the surface area per weight), the better the photocatalyst can function. Therefore, the photocatalyst in the form of granules of the present invention has an advantage over the same amount of photocatalyst fixed on a substrate, as in Kimura, since the granules have a larger specific surface area than that of the substrate. In the prior art, the photocatalyst must be handled with a substrate for fixation as seen in Kimura. In contrast to Kimura, the photocatalyst in the form of granules of the present invention can be handled without any substrates for fixation, therefore it has several advantages, in that it can be packed in a container for transports, handling thereof is

easier etc. When it is used for a photolysis system, the freedom in designing the system increases.

Applicants have shown that the photocatalyst granules of the claims of the present invention and the method of preparation thereof are neither taught nor suggested by Kimura. Withdrawal of the rejection of claims 1-4 and 6-14 on the basis of Kimura is therefore respectfully requested.

In paragraph 10 of the Office Action, claims 1-4 and 6-7 have been rejected under § 102 over Taoda. Applicants respectfully traverse this rejection.

As with Kimura as described above, Taoda fails to teach or even suggest the formation of a photocatalyst in granular form. The photocatalyst of Taoda is a coating composition and there is no teaching or suggestion whatsoever for forming granules. Applicants therefore respectfully submit that all of the claims of the present application are patentably distinct over the coating composition of Taoda, and withdrawal of the rejection on the basis of Taoda is respectfully requested.

In paragraph 12 of the Office Action, claim 5 has been rejected under § 103 over Taoda. Applicants believe there is a typographical error on page 7 of the Office Action in that claim 5 is presumably rejected over Taoda in view Heller. The following remarks are made with this presumption in mind. As with Kimura and Taoda, Heller fails to disclose or suggest forming the photocatalyst in granular form. Heller discloses a photocatalyst-binder composition comprising the photocatalyst being dispersed in binders. In Fig. 1 of Heller, a glass sphere is coated with the photocatalyst-binder composition. Again, there is no suggestion or teaching of the formation of granules. Withdrawal of the rejection of claim 5 on the basis of the combination of Taoda and Heller is therefore respectfully requested.

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In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. According, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

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